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Bangkok

Expert Group Meeting on Measuring Population Ageing:
Bridging Research and Policy

Healthy Ageing – what is it, can we measure it & use it

Dr Ritu Sadana, Senior Health Advisor
Dr Jotheeswaran Amuthavalli Thiyagarajan, Epidemiologist

Ageing and Life Course, World Health Organization, Geneva

Email: sadanar@who.int   Follow on Twitter: @RituSadana

World Health Organization

Reaching this potential requires a social transformation & good health

60 years   +20 years

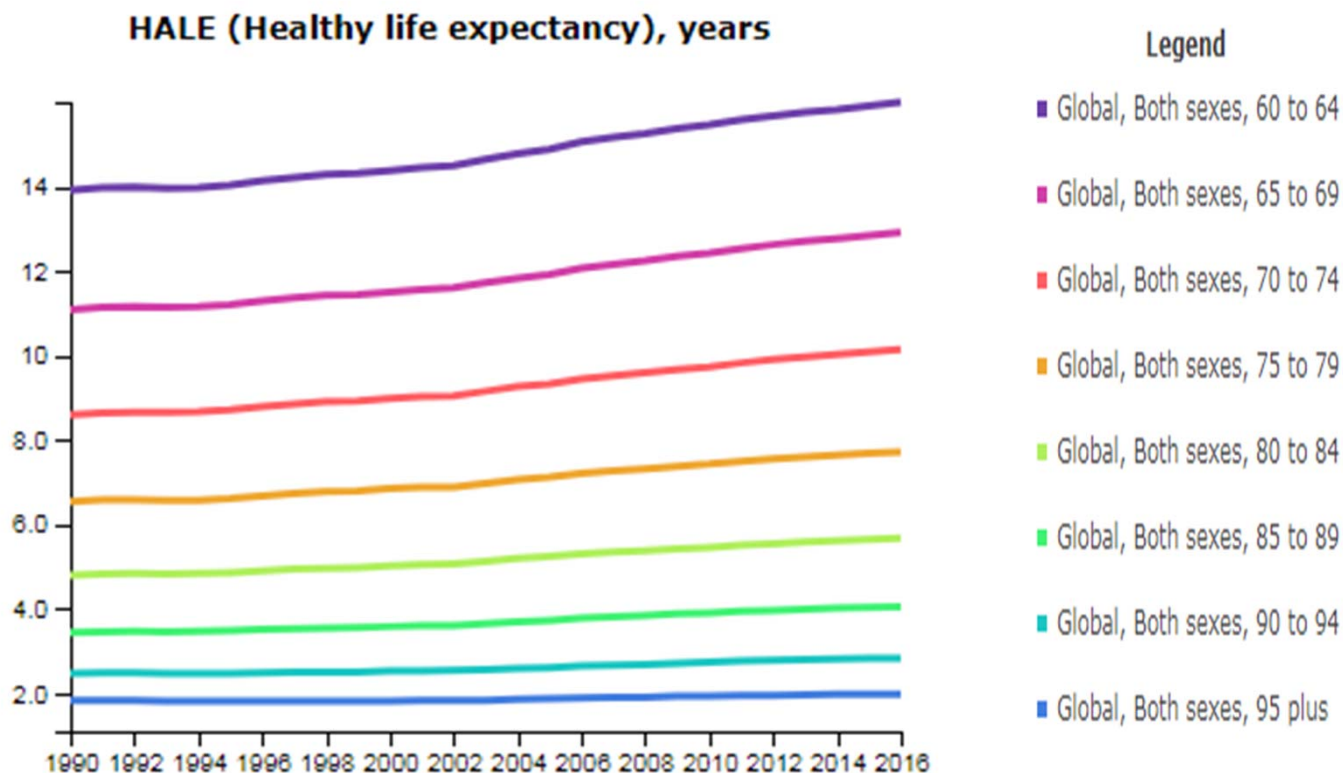80 years

At every age: global healthy life expectancy ⬆
Life expectancy minus Years lived with "disability" (YLDs)

HALE (Healthy life expectancy), years

Legend
- Global, Both sexes, 60 to 64
- Global, Both sexes, 65 to 69
- Global, Both sexes, 70 to 74
- Global, Both sexes, 75 to 79
- Global, Both sexes, 80 to 84
- Global, Both sexes, 85 to 89
- Global, Both sexes, 90 to 94
- Global, Both sexes, 95 plus

IHME data, 2018

But not all people are living longer…

Life expectancy at birth, 194 countries, by sex
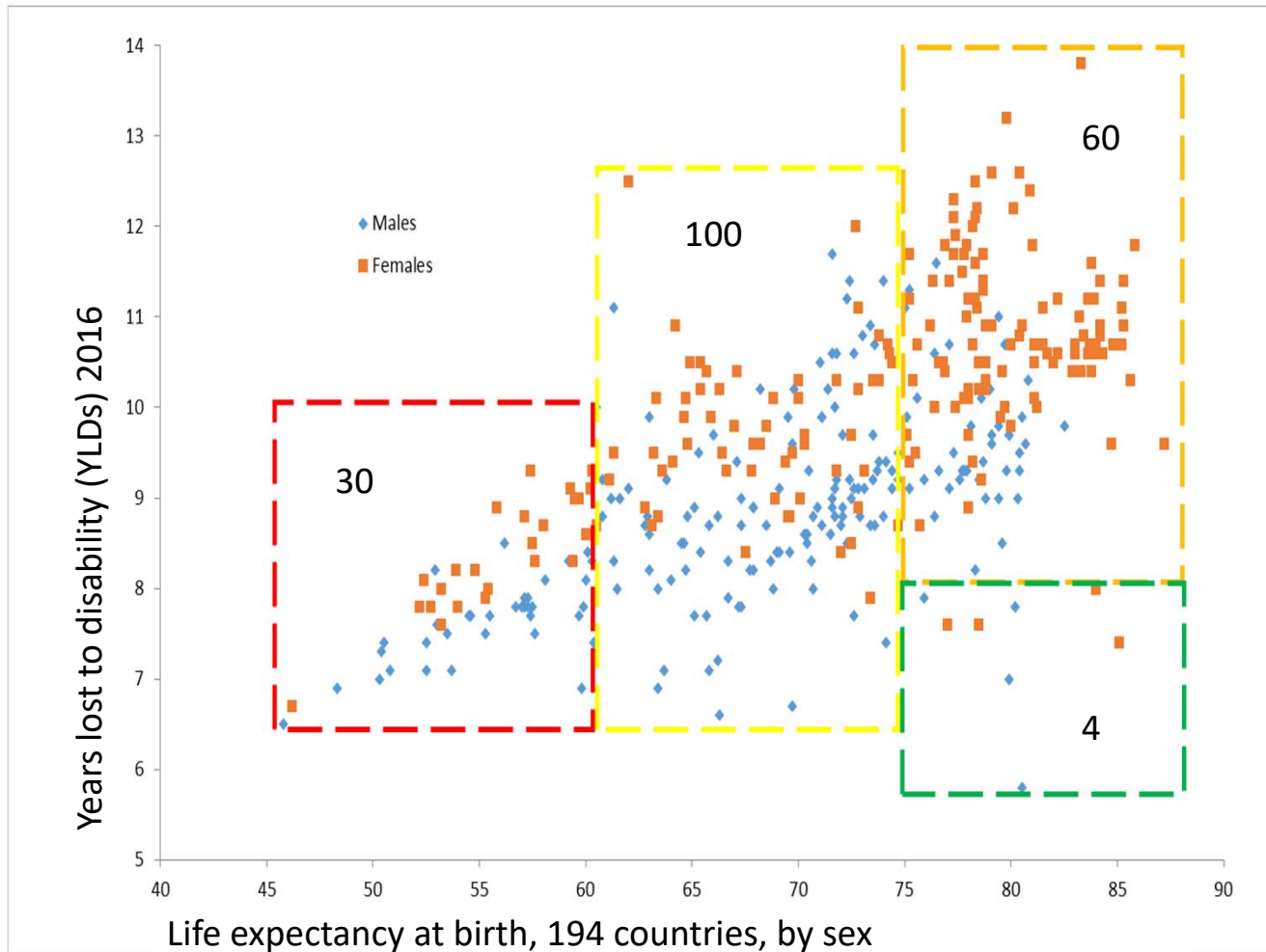
or
in good
health

Sadana et al. 2016

1. **Morbidity and Mortality**
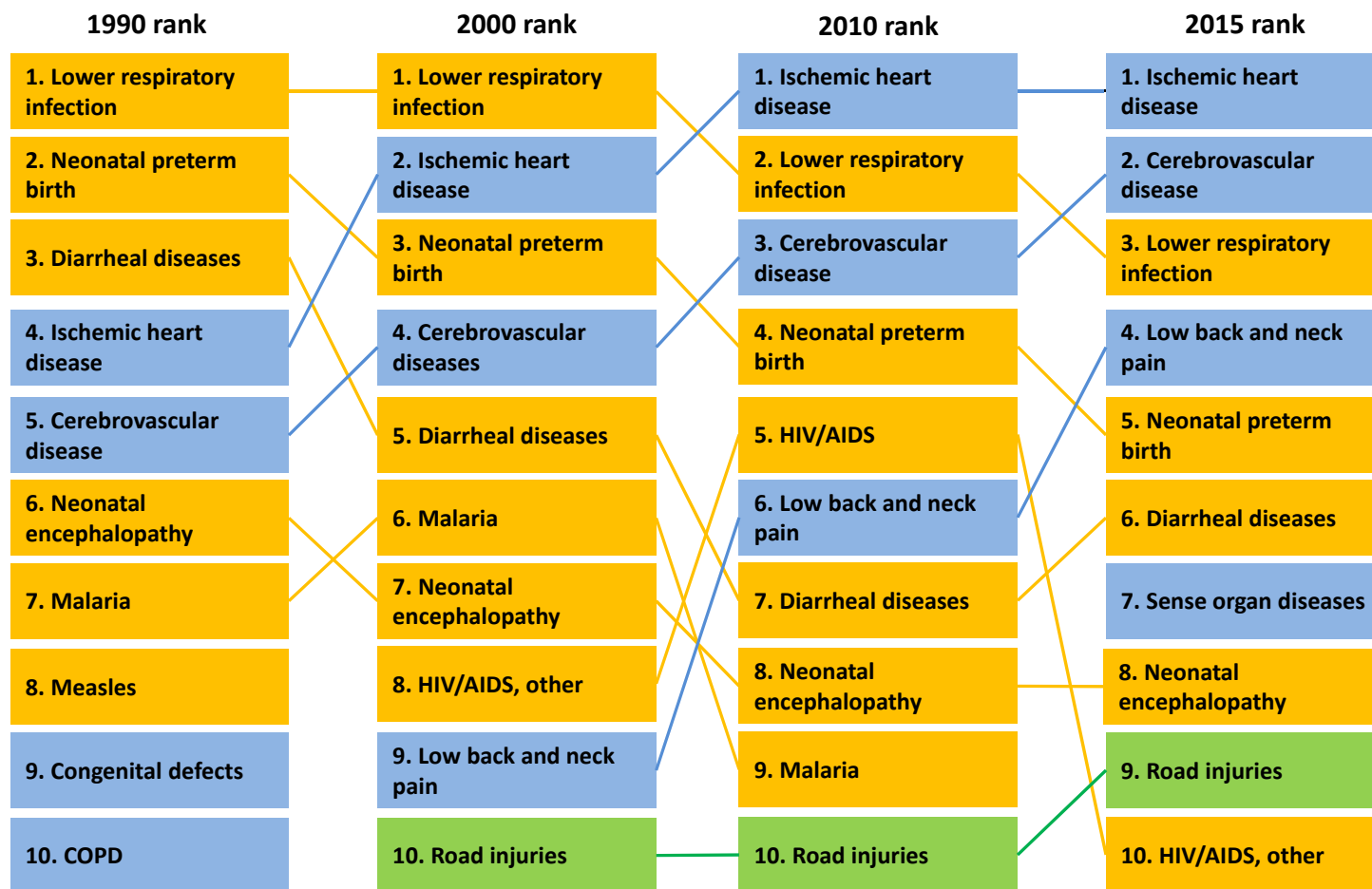2. **Healthy ageing**
3. **Baseline report, 2020**

WE NEED TO BETTER DOCUMENT MORBIDITY AND MORTALITY

Top 10 causes of DALY (Percent of total DALYs) all ages, both sexes

Legend:
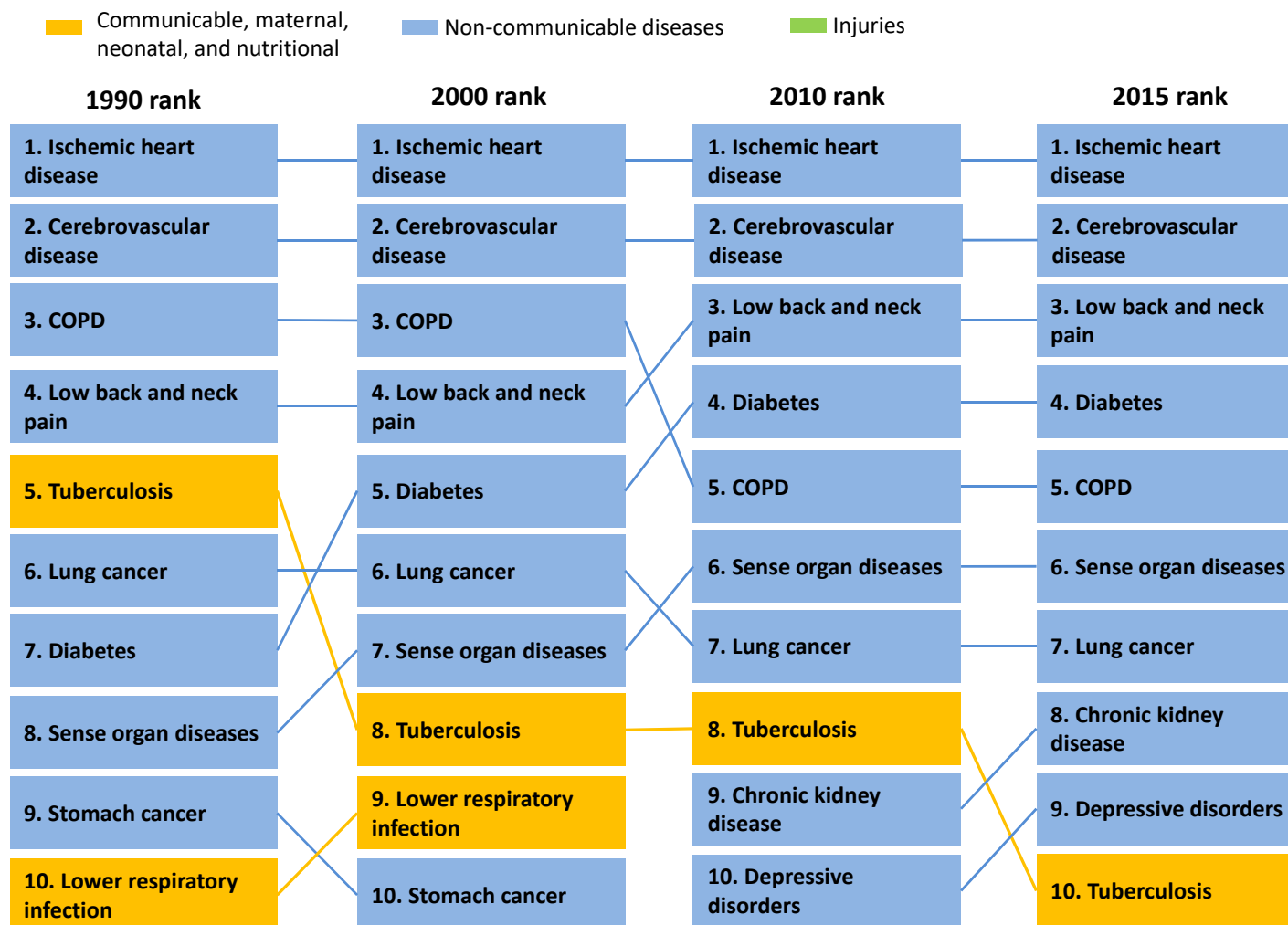- Communicable, maternal, neonatal, and nutritional
- Non-communicable diseases
- Injuries

1990 rank	2000 rank	2010 rank	2015 rank
1. Lower respiratory infection	1. Lower respiratory infection	1. Ischemic heart disease	1. Ischemic heart disease
2. Neonatal preterm birth	2. Ischemic heart disease	2. Lower respiratory infection	2. Cerebrovascular disease
3. Diarrheal diseases	3. Neonatal preterm birth	3. Cerebrovascular disease	3. Lower respiratory infection
4. Ischemic heart disease	4. Cerebrovascular diseases	4. Neonatal preterm birth	4. Low back and neck pain
5. Cerebrovascular disease	5. Diarrheal diseases	5. HIV/AIDS	5. Neonatal preterm birth
6. Neonatal encephalopathy	6. Malaria	6. Low back and neck pain	6. Diarrheal diseases
7. Malaria	7. Neonatal encephalopathy	7. Diarrheal diseases	7. Sense organ diseases
8. Measles	8. HIV/AIDS, other	8. Neonatal encephalopathy	8. Neonatal encephalopathy
9. Congenital defects	9. Low back and neck pain	9. Malaria	9. Road injuries
10. COPD	10. Road injuries	10. Road injuries	10. HIV/AIDS, other

IHME data visualizer

Top 10 causes of DALY (Percent of total DALYs) adults aged 50-69, both sexes

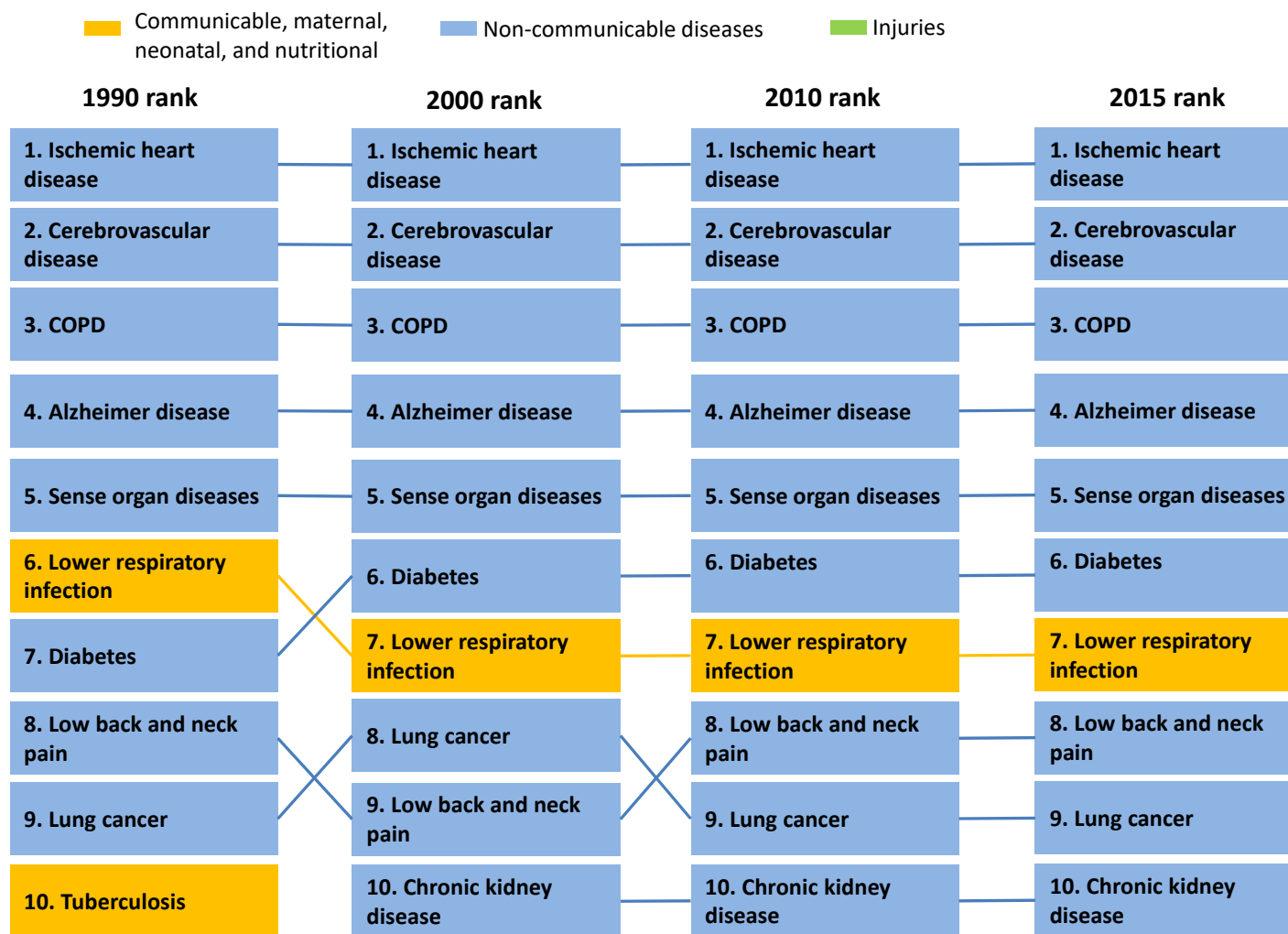■ Communicable, maternal, neonatal, and nutritional   ■ Non-communicable diseases   ■ Injuries

1990 rank	2000 rank	2010 rank	2015 rank
1. Ischemic heart disease	1. Ischemic heart disease	1. Ischemic heart disease	1. Ischemic heart disease
2. Cerebrovascular disease	2. Cerebrovascular disease	2. Cerebrovascular disease	2. Cerebrovascular disease
3. COPD	3. COPD	3. Low back and neck pain	3. Low back and neck pain
4. Low back and neck pain	4. Low back and neck pain	4. Diabetes	4. Diabetes
5. Tuberculosis	5. Diabetes	5. COPD	5. COPD
6. Lung cancer	6. Lung cancer	6. Sense organ diseases	6. Sense organ diseases
7. Diabetes	7. Sense organ diseases	7. Lung cancer	7. Lung cancer
8. Sense organ diseases	8. Tuberculosis	8. Tuberculosis	8. Chronic kidney disease
9. Stomach cancer	9. Lower respiratory infection	9. Chronic kidney disease	9. Depressive disorders
10. Lower respiratory infection	10. Stomach cancer	10. Depressive disorders	10. Tuberculosis

IHME data visualizer

Top 10 causes of DALY (Percent of total DALYs) adults aged 70+, both sexes

Legend:
- Communicable, maternal, neonatal, and nutritional
- Non-communicable diseases
- Injuries

1990 rank	2000 rank	2010 rank	2015 rank
1. Ischemic heart disease	1. Ischemic heart disease	1. Ischemic heart disease	1. Ischemic heart disease
2. Cerebrovascular disease	2. Cerebrovascular disease	2. Cerebrovascular disease	2. Cerebrovascular disease
3. COPD	3. COPD	3. COPD	3. COPD
4. Alzheimer disease	4. Alzheimer disease	4. Alzheimer disease	4. Alzheimer disease
5. Sense organ diseases	5. Sense organ diseases	5. Sense organ diseases	5. Sense organ diseases
6. Lower respiratory infection	6. Diabetes	6. Diabetes	6. Diabetes
7. Diabetes	7. Lower respiratory infection	7. Lower respiratory infection	7. Lower respiratory infection
8. Low back and neck pain	8. Lung cancer	8. Low back and neck pain	8. Low back and neck pain
9. Lung cancer	9. Low back and neck pain	9. Lung cancer	9. Lung cancer
10. Tuberculosis	10. Chronic kidney disease	10. Chronic kidney disease	10. Chronic kidney disease

IHME data visualizer

Counting Older Adults within Global Commitments

Madrid International Action Plan (MIPAA)

Goal 2 promotes participation, non-discrimination and social inclusion of older adults

Goal 3 - Health

3.4 By 2030, reduce by one third "premature mortality" from noncommunicable diseases through prevention and treatment and promote mental health and well-being

➤ cardiovascular disease, cancer, diabetes or chronic respiratory disease

[SDG 3.4.1] includes people between 30 and 70 years of age

SDG3 aims to ensure healthy lives and promote wellbeing for all, at all ages.

Leave no one behind requires countries to pay attention to health inequalities and act on health inequities.

Cardiovascular disease mortality rate,
global, 10 sub-causes, 23 age groups, both sexes, 2017

2015

Global strategy and action plan on ageing and health
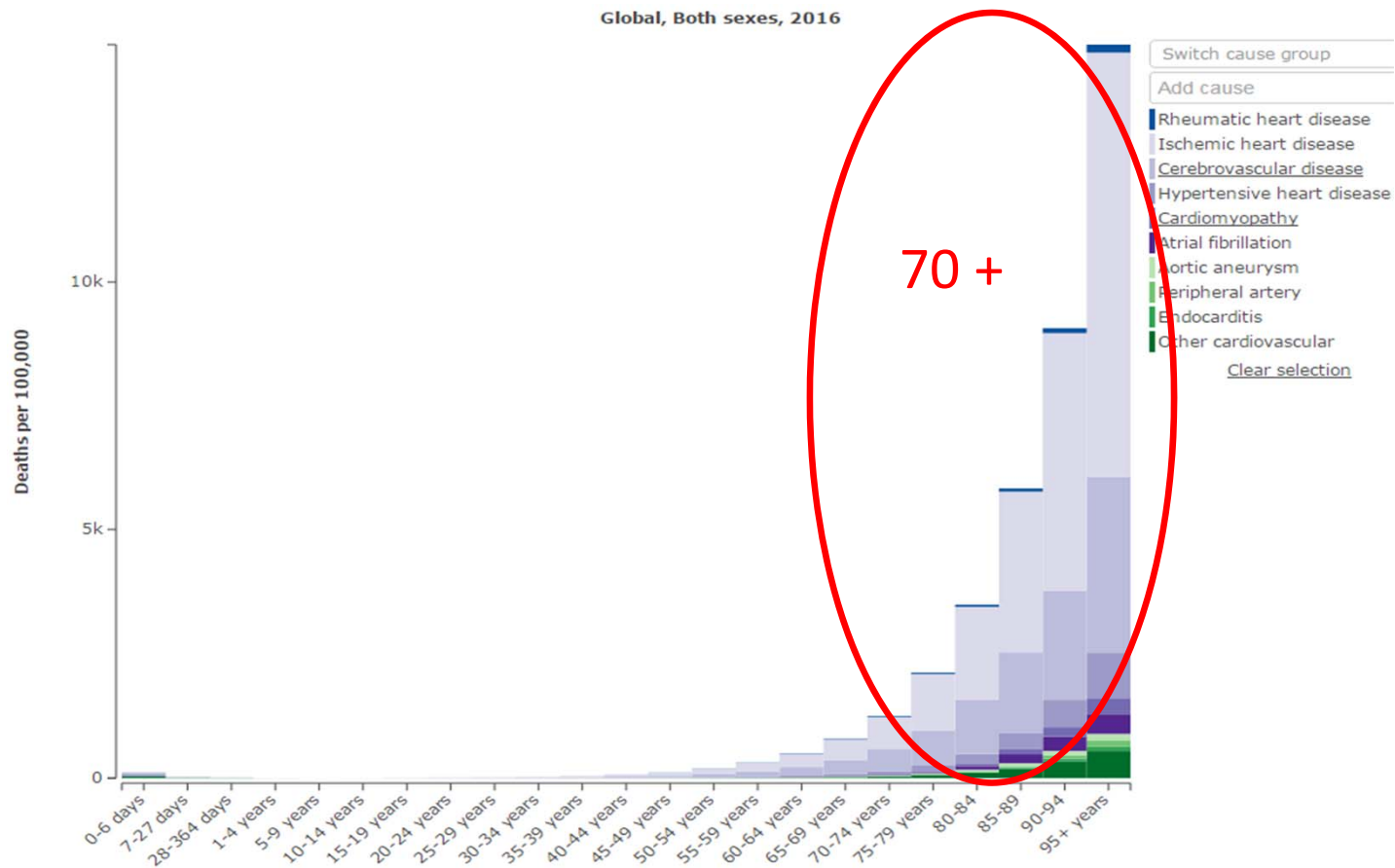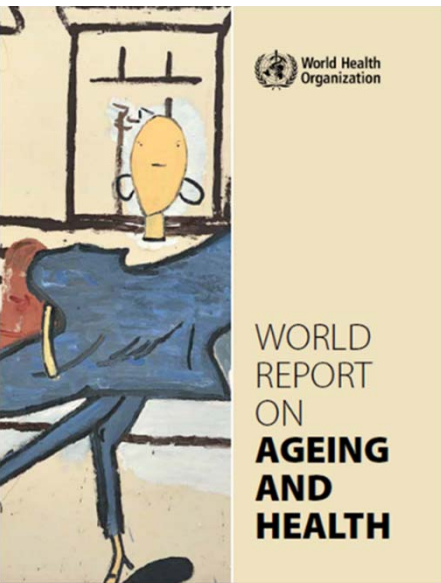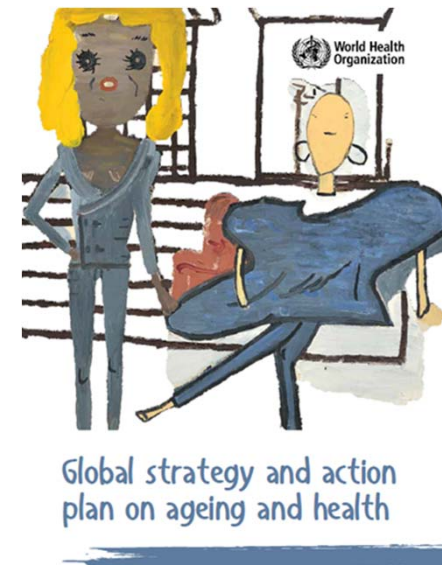
2016

2. Healthy ageing

- what is it, can we measure it?

- *what can we do to optimize it?*

Healthy Ageing – what matters to older adults

It is the process of developing and maintaining the **functional ability** that enables wellbeing in older age

A **continuous** phenomenon, an **inclusive** concept, not equivalent to disease-free, not simply age dependent

World Health Organization

WORLD REPORT ON **AGEING AND HEALTH**
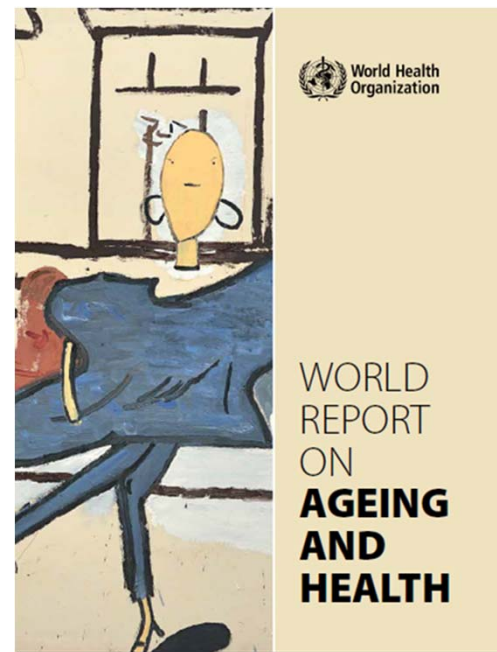
Healthy Ageing - what is it?

Two Components

- **Functional ability** reflects the interaction between individuals' intrinsic capacity and the environment they are living in.

- **Intrinsic capacity** is determined by many factors, including underlying physiological and psychological changes, health-related behaviors and the presence or absence of disease

Healthy Ageing trajectories - continuous

High and stable capacity **Declining capacity** **Significant loss of capacity**

Functional ability

Intrinsic capacity

Prevent care dependence; yet provide support if care dependent

World Report on Ageing and Health 2015

High and stable | Declines | Significant loss

Functional Ability

Intrinsic Capacity
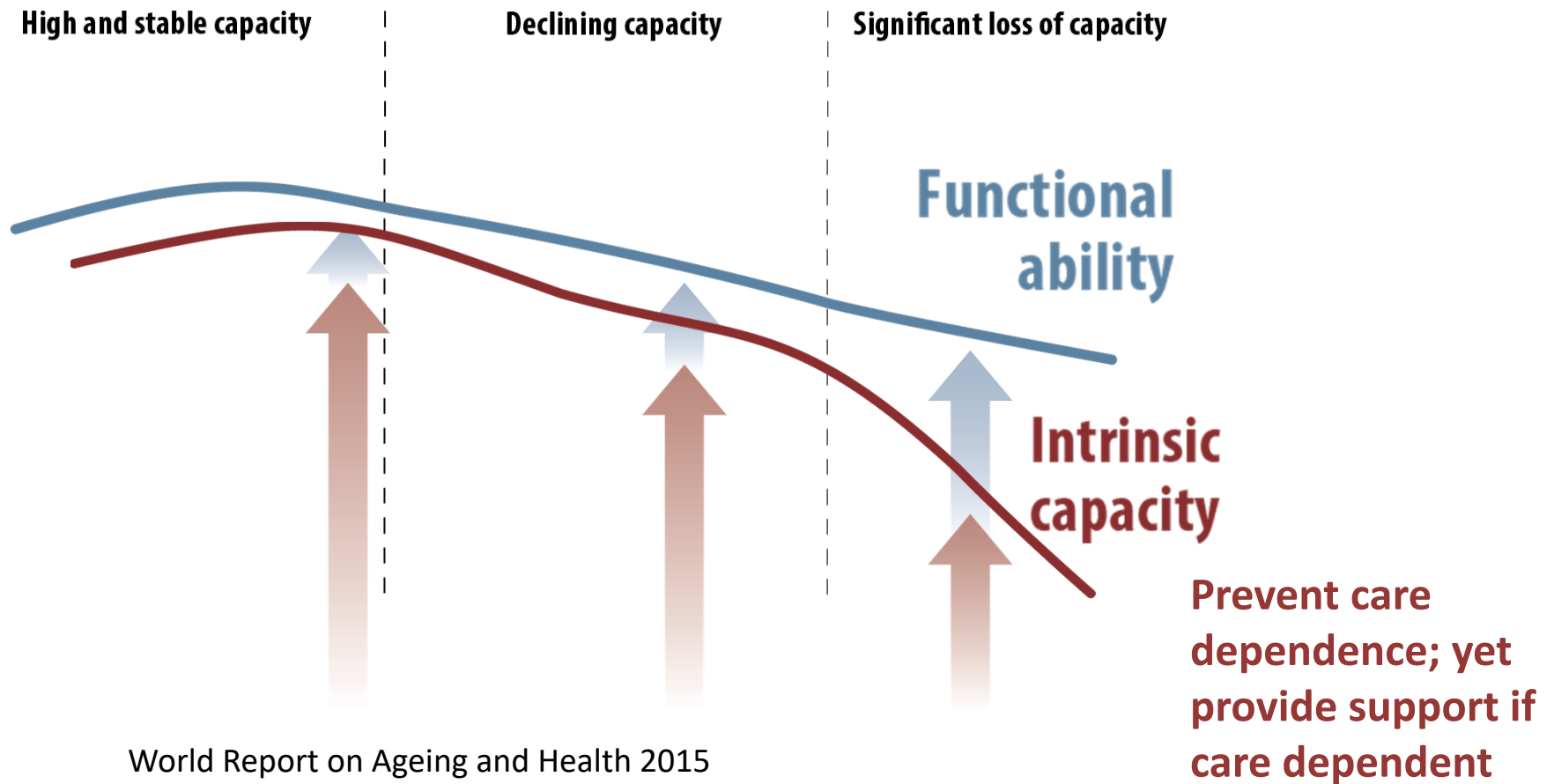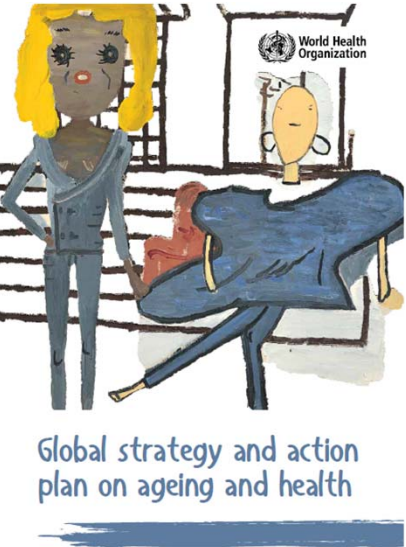
Health System

Long term care

Environment

Global strategy and action plan on ageing and health

Prevent chronic conditions or ensure early detection and control

Reverse or slow declines in capacity

Manage advanced chronic conditions

Support capacity-enhancing behaviours

Ensure a dignified late life

Promote capacity-enhancing behaviours

Remove barriers to participation, compensate for loss of capacity

WHO 2015

Care dependence, not dependency ratio

Measured using Activities of Daily Living (ADLs) which capture any difficulty with six activities, due to declines in intrinsic capacity (physical, cognitive, emotional or memory etc.):

- Bathing
- Dressing
- Eating
- Getting in/out of bed
- Using the toilet
- Walking across a room

Three different outcomes:
- Prevalence – the rate of people having at least one ADL difficulty at any one point in time
- Incidence – the rate at which someone with no difficulties develops at least one
- Short term and or reversible

CAN WE CLARIFY AND OPERATIONALIZE THE CONCEPTS

Compilation of the different domains used to describe ageing in 10 recently published studies

	Phelan 2002	Young 2009	Sabia 2012	Tyrovolas 2014	Bousquet 2015	Cosco 2015	Lara 2015	Assmann 2016	Tampubolon 2016	Jaspers 2017
Education				X						
Diet				X						
Physiological/Physical Health		X	X		X		X			X
Nl function/markers			X	X			X			
CVx			X						X	
Lung/respiratory				X			X		X	
Metabolic							X		X	
Endocrine		X	X							
Muscule-Skeletal										
Inflammation										
No Chronic Disease (CVx, COPD, Cancer, diabetes)										
No pain										
Mental Health										
Intact cognition			XX							
Good mood/emotion		X	X	X						
Preserved autonomy			X							
Daily Functioning										
No ADL inability	X									
Functional independence	X									
Walking speed			X							
FEV1			X							
Personal perception										
Feeling										
Resource										
Engagement	X	X								
Goals	X									
Satisfaction	X									
Quality of Life	X									
Social life										
Activities participation	X			X	X				X	
Support										X
Relations					X					
Spirituality		X							X	
Wealth				X						
Environment										
Healthy					X					
Controlled										

STUDIES USE DIFFERENT, ARBITRARY WAYS TO DESCRIBE AGEING, DISEASES, CONDITIONS, CAPACITIES, ABILITIES, FUNCTIONING, QUALITY OF LIFE, WELL BEING . . .

Michel & Sadana, 2017

WHO Family of International Classifications

Diseases
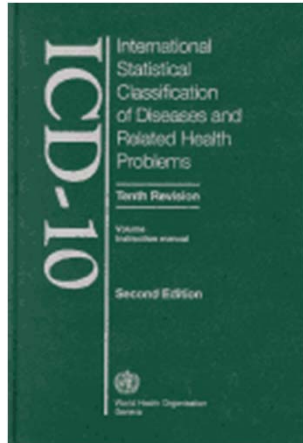
Single or few codes

Code M05 Seropositive Rheumatoid arthritis

Health

Comprehensive profile

ICF categories		ICF Qualifier					
		problem					
		0	1	2	3	4	
b710	Mobility of joint functions						
d230	Carrying out daily routine						
d240	Handling stress and other psychological demands						
d8502	Part-time employment						
d920	Recreation and leisure						

		facilitator				barrier				
		4+	3+	2+	1+	0	1	2	3	4
e115	Assistive products… for personal use in daily living									
e120	Assistive products…for personal mobility									
e340	Personal care providers									
e310	Immediate family									

Healthy ageing – unpack it

| Intrinsic Capacity	Functional Ability	Environment
➢ Cognitive ➢ Psychological ➢ Sensory ➢ Neuromusculoskeletal ➢ Voice and speech ➢ Cardiovascular ➢ Haematological ➢ Respiratory ➢ Immunological ➢ Digestive ➢ Metabolic ➢ Endocrine ➢ Genitourinary ➢ Reproductive ➢ Skin, hair and nails **15 potential sub domains**	➢ Learning and applying knowledge ➢ Communication ➢ Mobility ➢ Self-care ➢ Domestic life ➢ Interpersonal interactions and relationships ➢ Major life areas ➢ Community, social and civic life **8 Potential sub domains**	➢ Products and technology ➢ Natural and built environment ➢ Support and relationships ➢ Attitudes ➢ Services, systems and policies **5 potential sub domains**

ICF
International
Classification of
Functioning,
Disability
and
Health

World Health Organization
Geneva

Intrinsic capacity:
sub-domains and relationships
USA, Health & Retirement Study 2016

Normative/Concept driven – 10 domains
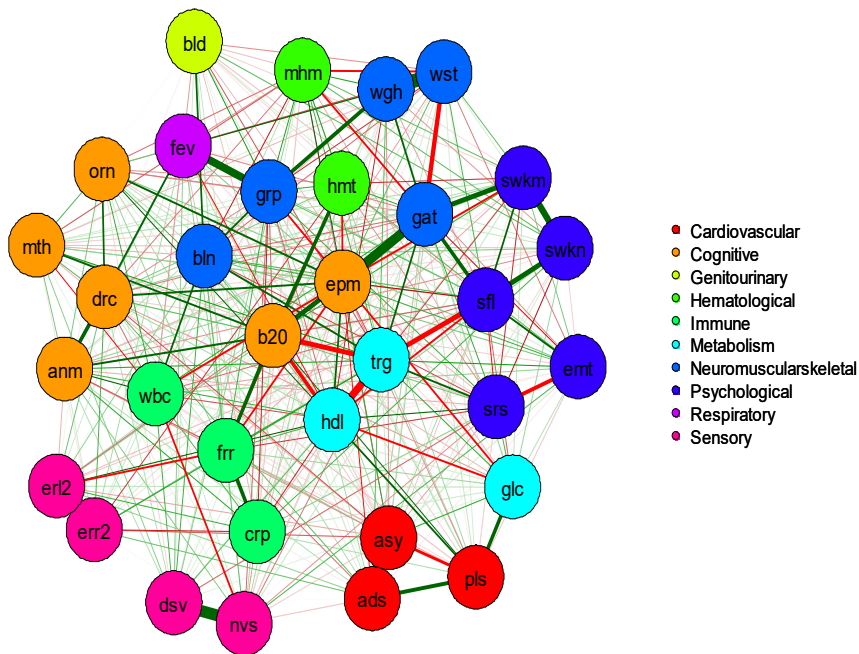
Empirical/Data-driven – 11 domains

Healthy ageing – unpack it

Intrinsic Capacity	Functional Ability	Environment
➢ Cognitive	➢ Learning and applying knowledge	➢ Products and technology
➢ Psychological	➢ Communication	➢ Natural and built environment
➢ Sensory	➢ Mobility	➢ Support and relationships
➢ Neuromusculoskeletal	➢ Self-care	➢ Attitudes
➢ Voice and speech	➢ Domestic life	➢ Services, systems and policies
➢ Cardiovascular	➢ Interpersonal interactions and relationships	
➢ Haematological	➢ Major life areas	
➢ Respiratory	➢ Community, social and civic life	
➢ Immunological		
➢ Digestive		
➢ Metabolic		
➢ Endocrine		
➢ Genitourinary		
➢ Reproductive		
➢ Skin, hair and nails		

ICF International Classification of Functioning, Disability and Health

World Health Organization Geneva

Mobility, a sub-domain of Functional Ability

CAN WE
MEASURE IT

Intrinsic capacity, cross sectional, by age, 6 countries, WHO SAGE
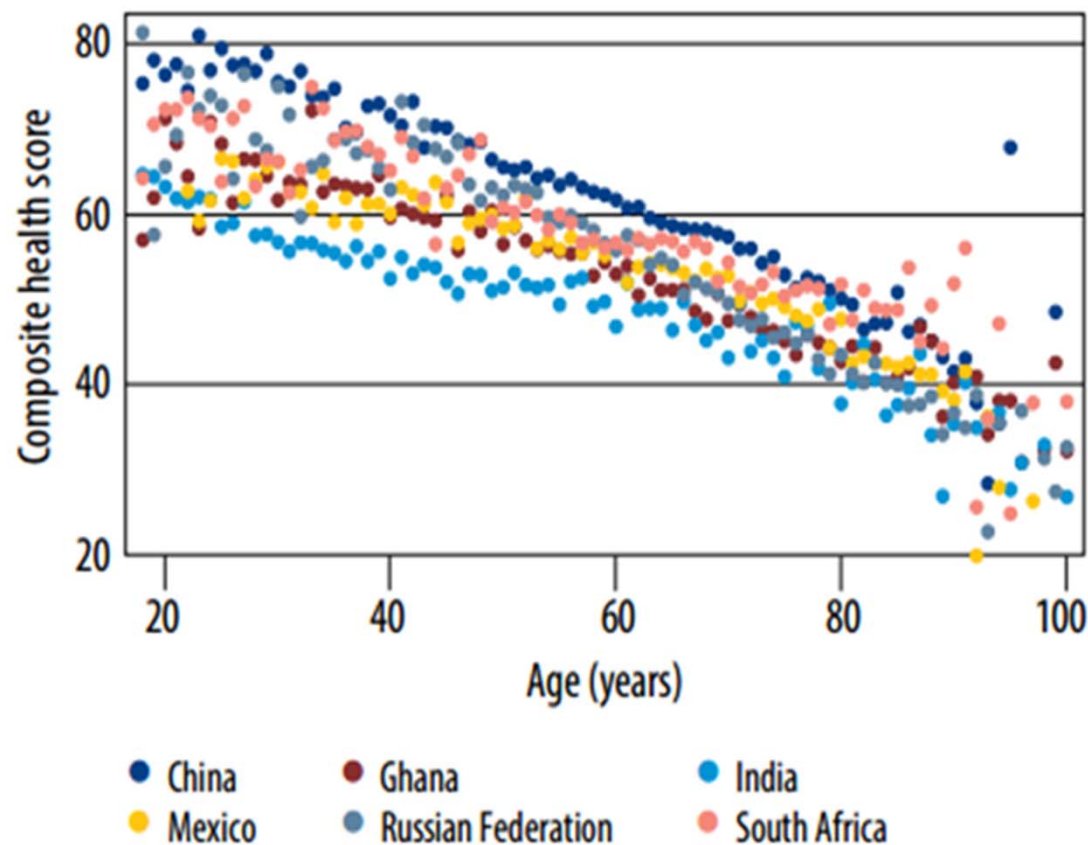
Source: World Report on Ageing and Health

Data Source: SAGE wave 1, cross sectional data, 6 countries, 2007-2010

Intrinsic capacity, India and Russia, men and women, age 50 plus, by household wealth
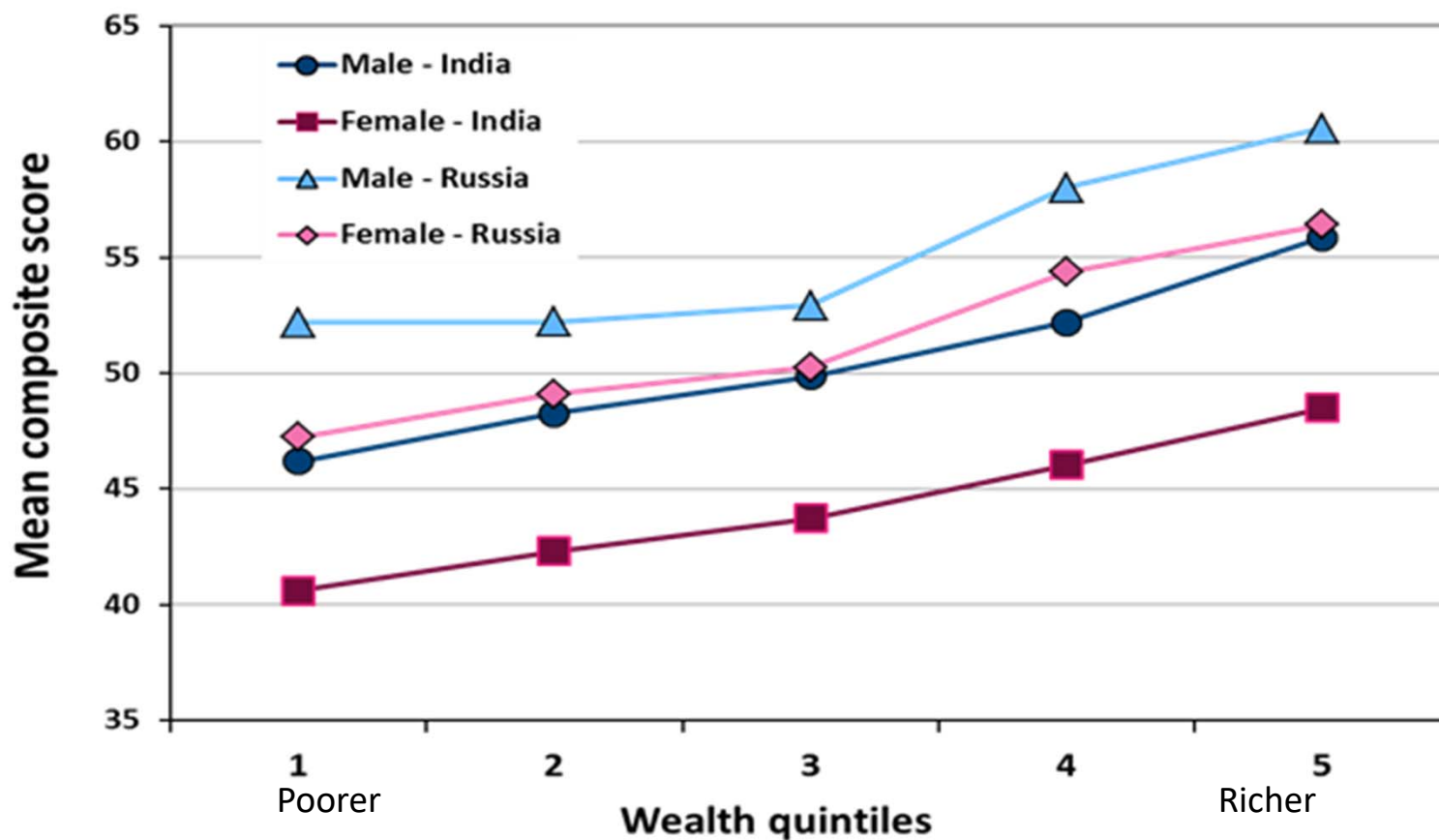
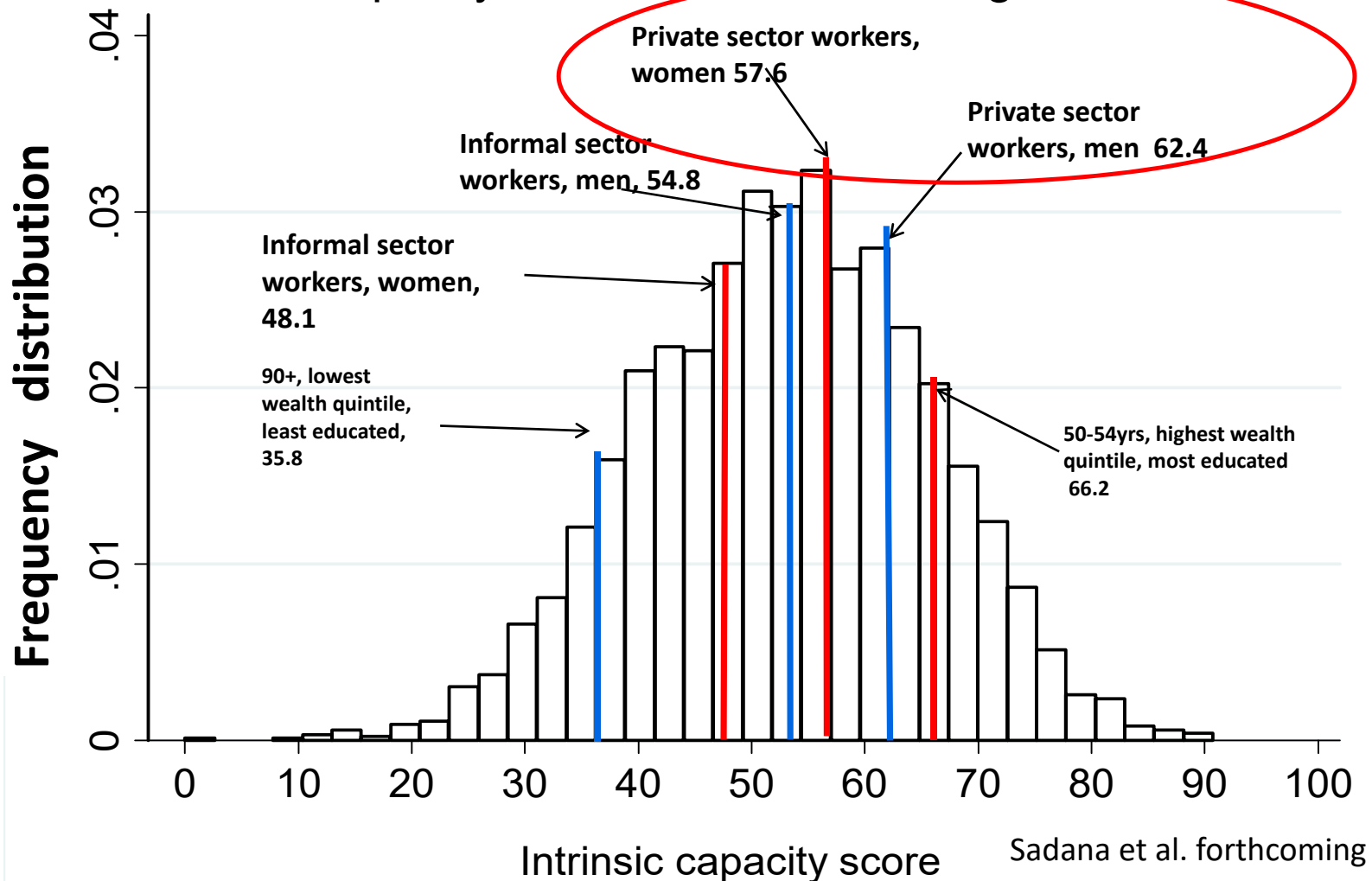**Data Source: SAGE wave 1, cross sectional data, 2 countries**   Sadana et al. forthcoming

Distribution of intrinsic capacity score
(WHO world population standard, 50+, both sexes)

China

Russia — Shift →

India — Pull up ↑

South Africa — Narrow →

Ghana

Mexico
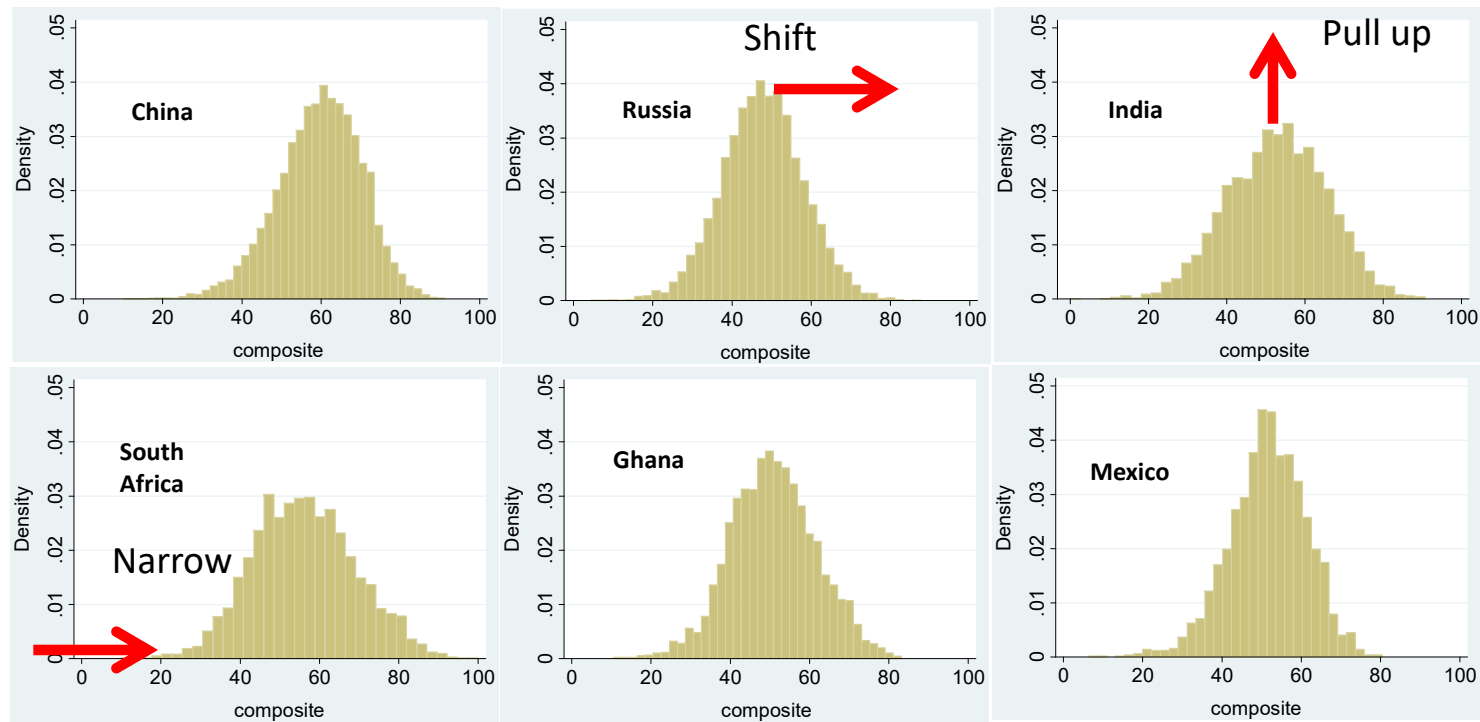
Source database: SAGE, WHO, wave 1, cross sectional data

WHAT DOES
THIS MEAN

Intrinsic capacity score distribution for ages 50+, Russia

Frequency distribution (y-axis: 0, .01, .02, .03, .04)

Private sector workers, women 57.6

Informal sector workers, men, 54.8

Private sector workers, men 62.4

Informal sector workers, women, 48.1

90+, lowest wealth quintile, least educated, 35.8

50-54yrs, highest wealth quintile, most educated 66.2

Intrinsic capacity score (x-axis: 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100)

Sadana et al. forthcoming

Intrinsic capacity score distribution for ages 50+, India

Private sector workers, women 45.4

Informal sector workers, women, 42.5

Informal sector workers, men, 48.2

Private sector workers, men 54.1

90+, lowest wealth quintile, least educated, 26.0

50-54yrs, highest wealth quintile, most educated 62.2

Frequency distribution

Intrinsic capacity score

Sadana et al. forthcoming

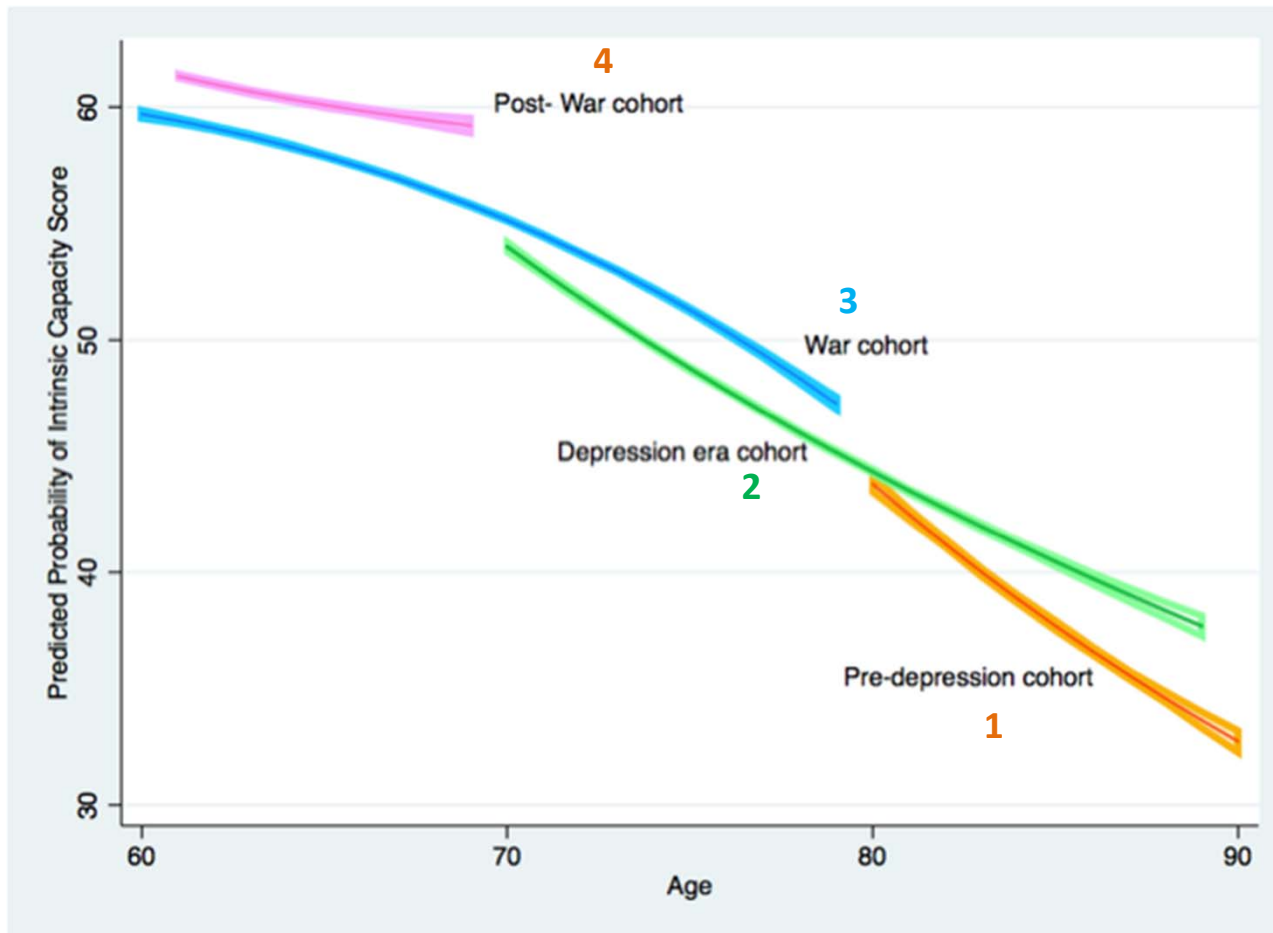# Crude distribution of functional ability score men and women 50+, India

Shift the distribution
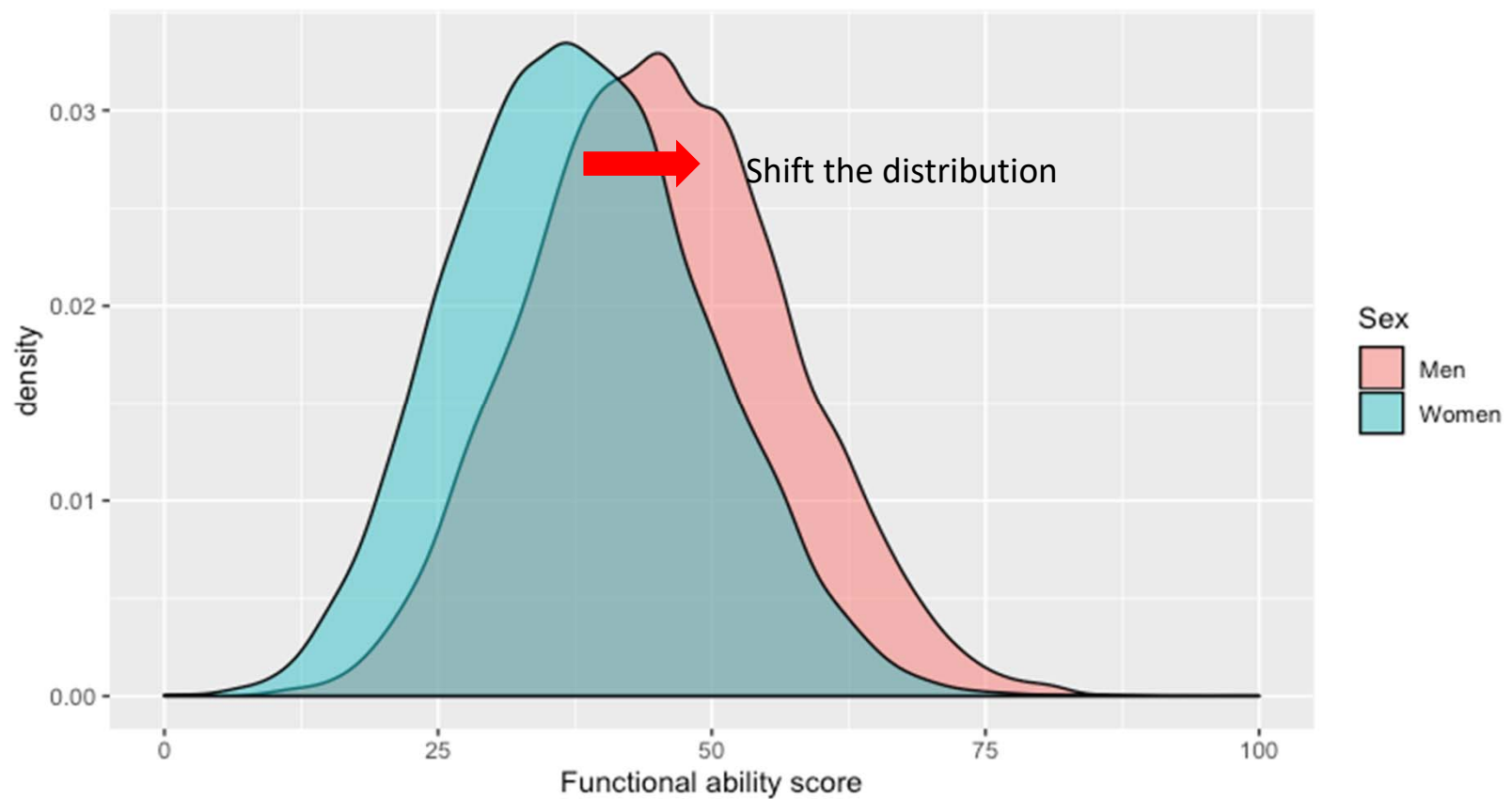
LASI pilot, 2015

Crude distribution of functional ability score, men and women, 50+

18 European countries

SHARE, 2015
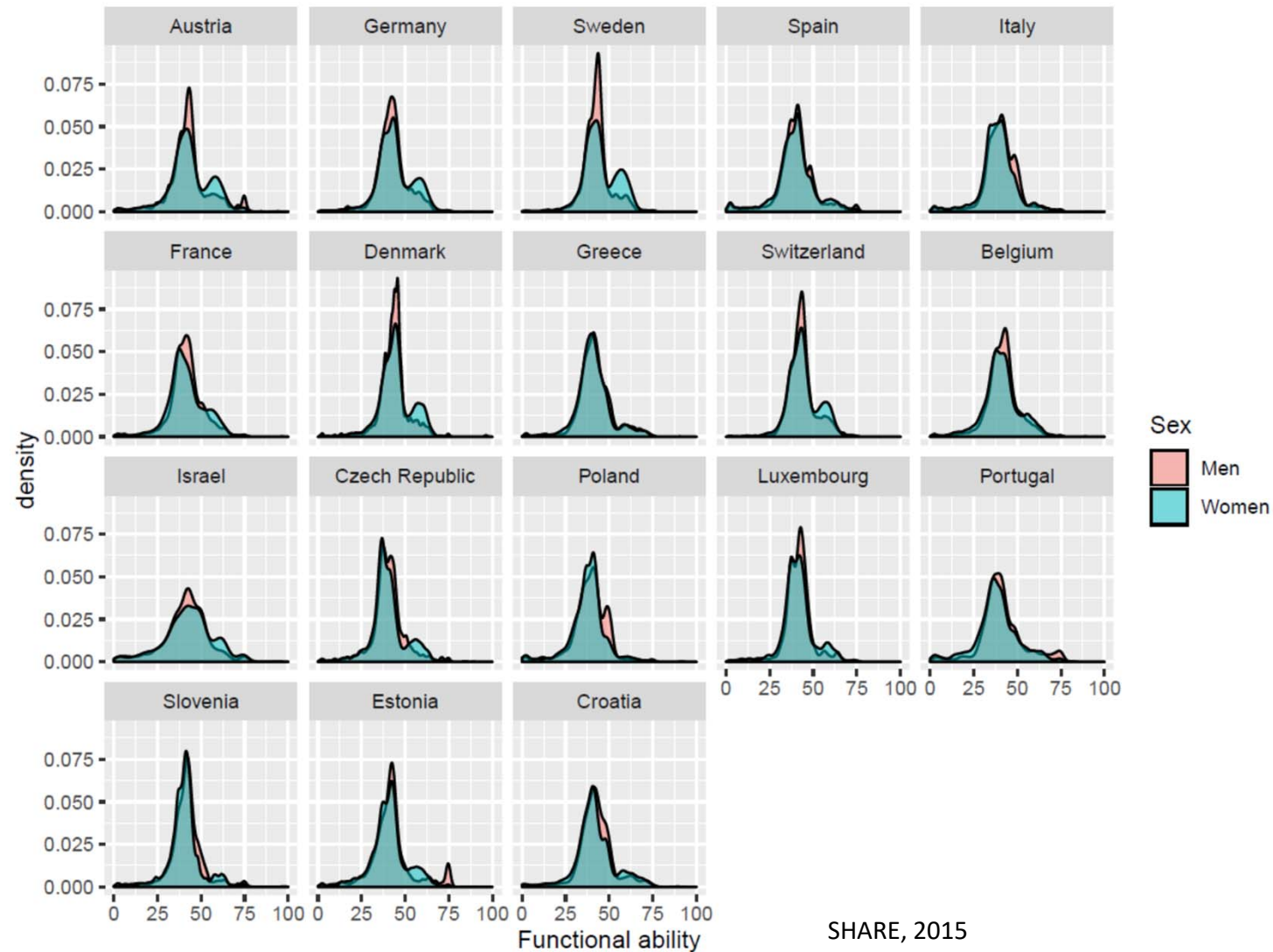
Intrinsic Capacity Trajectories: cohort effect, older adults 50+, England

Amuthavalli Thiyagarajan et al. forthcoming

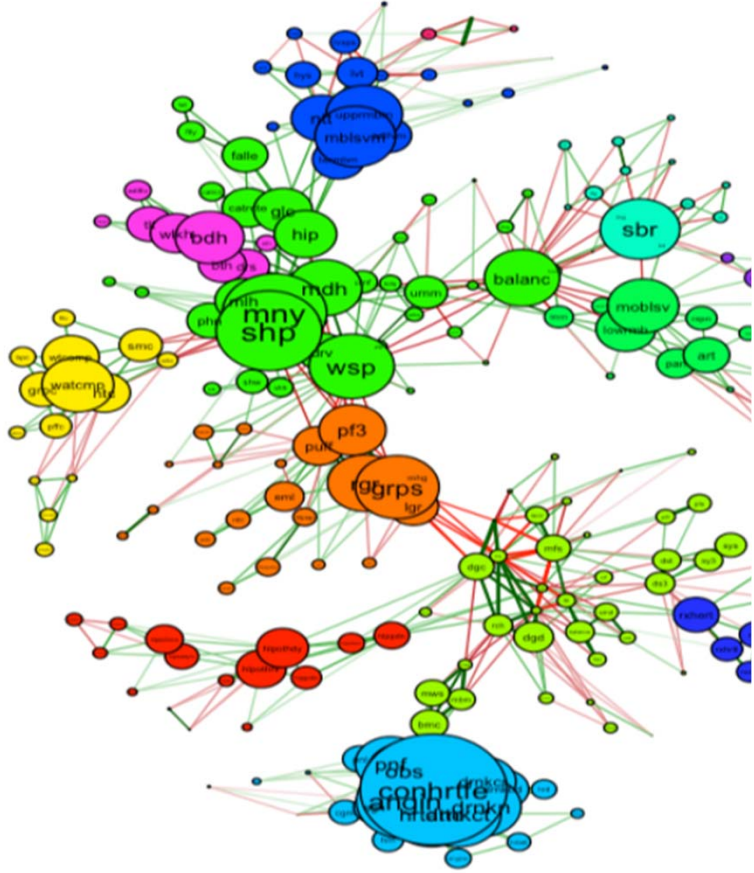# Cohort effect on cognitive capacity (sub domain), adults 50+, by childhood socioeconomic status
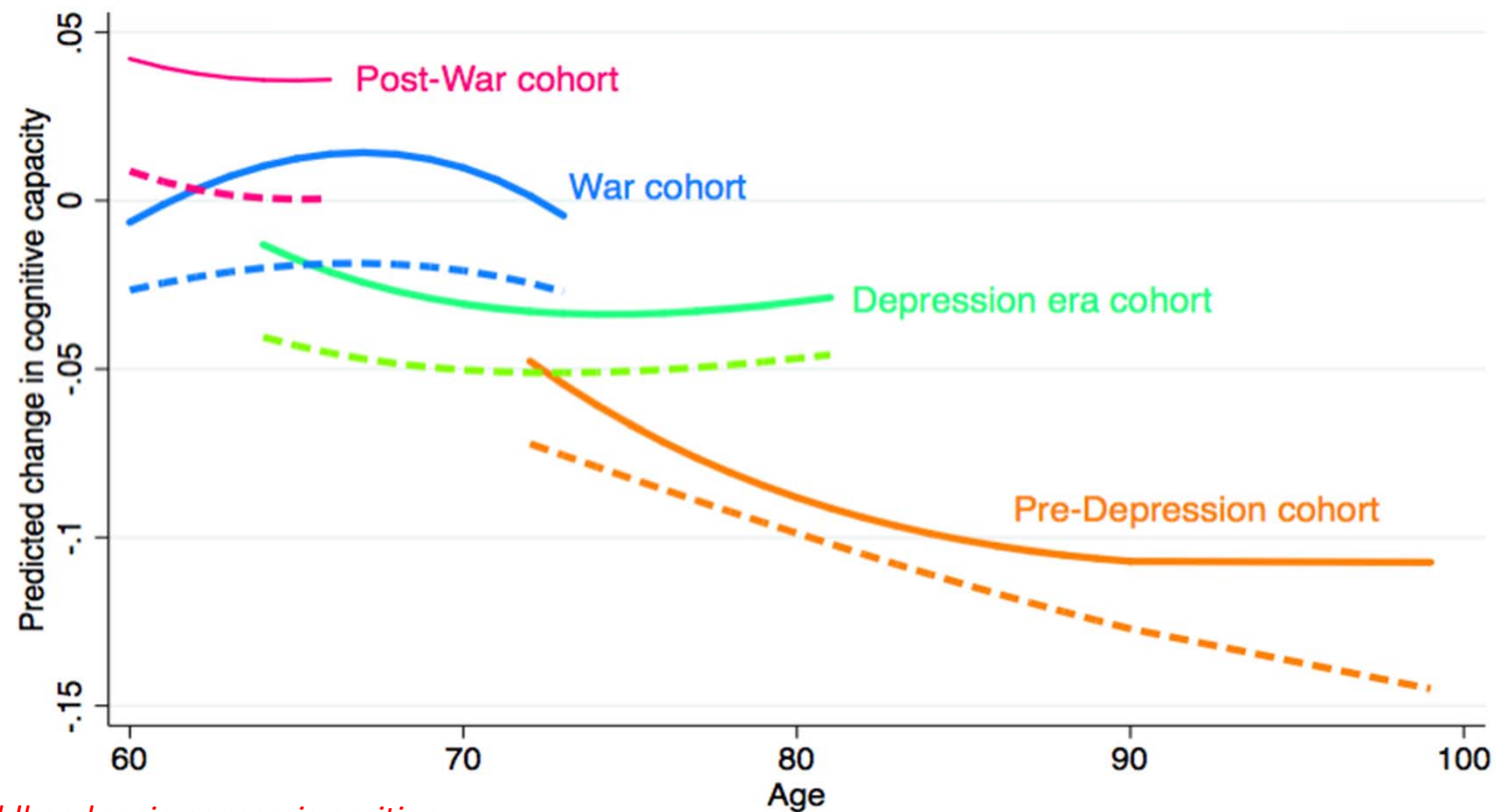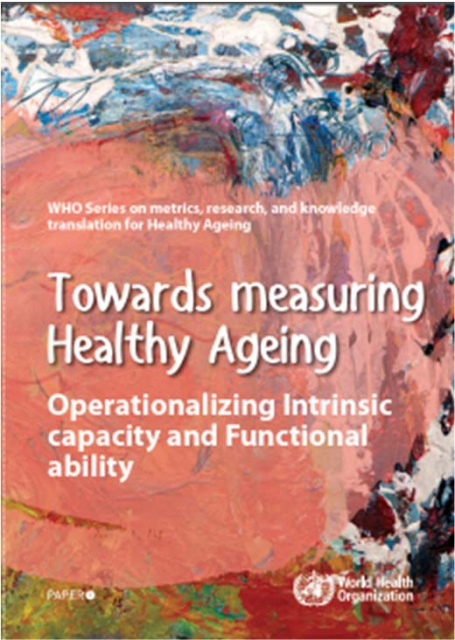

Solid line = high childhood socio economic position
Dash line = low childhood socio economic position

ELSA, 2017   Amuthavalli Thiyagarajan et al. forthcoming

Strategic objective 5: Improving measurement, monitoring and research on Healthy Ageing

Documenting relationship between Healthy Ageing domains and subdomains from 50+ national surveys

ACCOUNTABILITY IS ONE WAY TO BRIDGE RESEARCH TO POLICY TO ACTION TO IMPACT

New WHO Baseline report on *Healthy Ageing*

| 2002 | | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | | 2030 |

Decade of Healthy Ageing 2020-2030

Mid-term progress

TCG Ageing

Cochrane Global Ageing

3. Base Line Report: Where we are – 2020

Global baseline – levels and distribution - Intrinsic capacity, functional ability, enabling environments and other important indicators such as care dependence, healthy life expectancy

- **new analysis of existing nationally representative data**
- **data from new nationally representative surveys**
- **best estimates for countries without data, and plan for strengthening national information**

Where we want to be – by 2030

**Goal alignment, targets and Indicators – projections towards potential targets
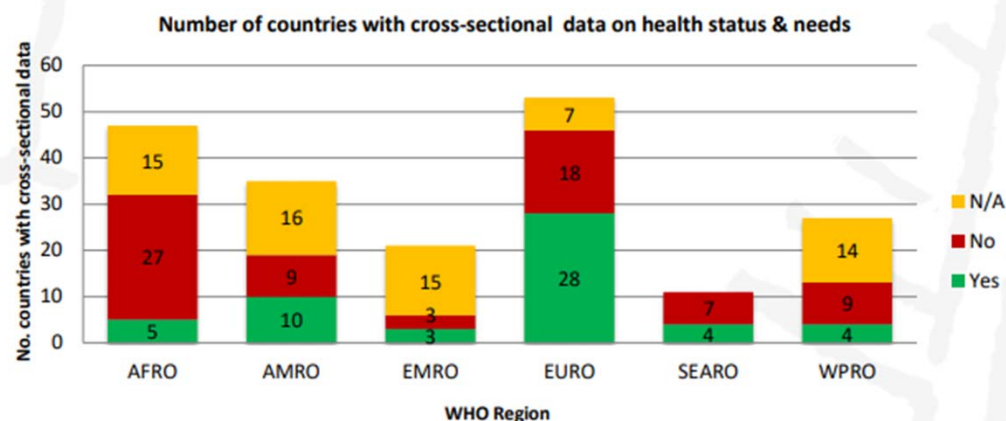Scenarios to support national planning & investments (informed by projections)**

How are we going to get there

What can be done (reflecting systematic reviews, norms in key areas, country case studies & experiences evaluated as good practice) in different contexts
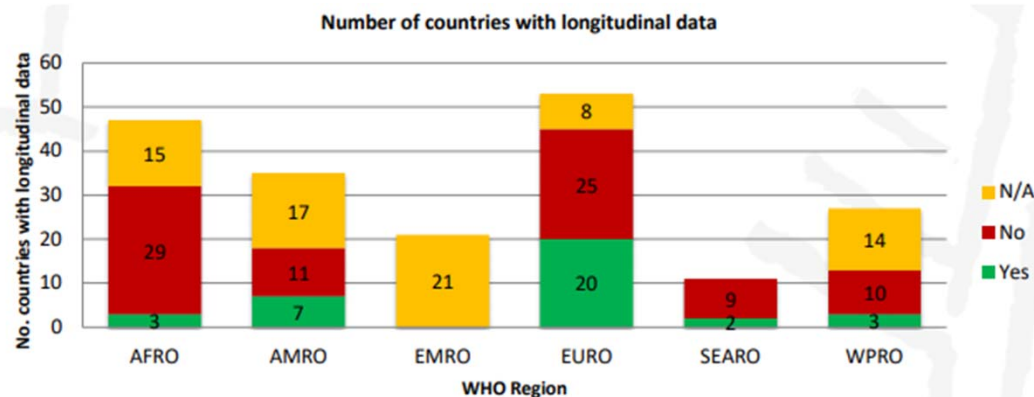
Cross-sectional Only 54

9 Cross-sectional data on health status and needs

10 Longitudinal data on health status and needs

Longitudinal Only 35

Number of countries with cross-sectional data on health status & needs

No. countries with cross-sectional data

	N/A	No	Yes
AFRO	15	27	5
AMRO	16	9	10
EMRO	15	3	3
EURO	7	18	28
SEARO		7	4
WPRO	14	9	4

WHO Region

Number of countries with longitudinal data

No. countries with longitudinal data

	N/A	No	Yes
AFRO	15	29	3
AMRO	17	11	7
EMRO	21		
EURO	8	25	20
SEARO		9	2
WPRO	14	10	3

WHO Region

10 indicators full results: www.who.int/ageing/commit-action/measuring-progress/en/

A 'Decade of Healthy Aging': Are you ready?

THANK YOU

Email: sadanar@who.int   **Follow on Twitter: @RituSadana**

World Health Organization